

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. R7-2004-0086  
FOR  
IMPERIAL IRRIGATION DISTRICT, OWNER/OPERATOR  
EL CENTRO GENERATING STATION  
El Centro - Imperial County

Location of Discharge: NE ¼ of Section 32, T15S, R14E, SBB&M

MONITORING

1. The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted by a laboratory certified by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40CFR Part 136), promulgated by the USEPA.
2. Samples shall be collected at the location specified in the Permit. If no location is specified, sampling shall be conducted at the most representative sampling point available.
3. If the facility is not in operation, or there is no discharge during a required reporting period, the discharger shall forward a letter to the Regional Board indicating that there has been no activity during the required reporting period.

EFFLUENT MONITORING

Wastewater discharged from the facility shall be monitored at the outlet pipe to receiving water, where representative samples of the effluent can be obtained. Wastewater discharged into the receiving water shall be monitored for the following constituents:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Daily Effluent Discharge	MGD <sup>1</sup>	Calculation	Daily <sup>2</sup>	Monthly
Temperature	°F	Grab	Daily <sup>3</sup>	Monthly
pH	pH Units	Grab	Daily <sup>3</sup>	Monthly
Chlorine Residual <sup>4</sup>	mg/L	Grab	Daily <sup>3</sup>	Monthly
Total Dissolved Solids (TDS)	mg/L	24-Hour Composite	Twice-Monthly	Monthly
Nitrates as Nitrogen (N)	mg/L	Grab	Monthly	Monthly
Nitrites as N	mg/L	Grab	Monthly	Monthly

<sup>1</sup> MGD – Million Gallons-Per-Day

<sup>2</sup> Reported monthly with monthly average daily flow

<sup>3</sup> Daily (excluding holidays and weekends)

<sup>4</sup> The discharger may monitor for dechlorinating agent residual and report residual chlorine as nondetectable if the dechlorinating agent is present. A grab sample shall be performed 3 times daily and the average result indicated on the report.

Ammonia Nitrogen as N	mg/L	Grab	Monthly	Monthly
Total Nitrogen as N	mg/L	Grab	Monthly	Monthly
Total Phosphorus (P)	mg/L	Grab	Monthly	Monthly
Ortho-Phosphate as P	mg/L	Grab	Monthly	Monthly
Total Iron	mg/L	Grab	Twice Monthly	Monthly
Total Suspended Solids (TSS)	mg/L	Grab	Twice Monthly	Monthly
Copper	µg/L <sup>5</sup>	Grab	Monthly	Monthly
Cyanide	µg/L	Grab	Monthly	Monthly
Nickel	µg/L	Grab	Monthly	Monthly
Selenium	µg/L	Grab	Monthly	Monthly
Thallium	µg/L	Grab	Monthly	Monthly
Zinc	µg/L	Grab	Monthly	Monthly
Sulfates	mg/L	Grab	Quarterly	Quarterly
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	Quarterly	Quarterly
Volatile Organic Compounds (EPA Methods 624 and 625)	µg/L	Grab	Annually	Annually
Oil and Grease	mg/L	Grab	Annually	Annually

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Sampling stations shall be as follows:

<u>Station</u>	<u>Description</u>
R-1	Not to exceed 100 feet upstream from the point of discharge. A greater distance may be acceptable provided the discharger submits proper justification that the prescribed distance is inaccessible.
R-2	Not to exceed 25 feet downstream of the discharge pipe outlet.

<u>Constituent</u>	<u>Unit</u>	<u>Station</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Temperature	oF	R-1, R-2	Daily	Monthly
Dissolved Oxygen	mg/L	R-1, R-2	Daily	Monthly
pH	----	R-1, R-2	Daily	Monthly

<sup>5</sup> µg/L – micrograms-per-Liter

Hardness (CaCO <sub>3</sub> )	mg/L	R-1, R-2	Monthly	Monthly
Oil and Grease	mg/L	R-1, R-2	Quarterly	Quarterly

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions at Stations R1 and R2. Attention shall be given to the presence or absence of:

- |   |   |
|---|---|
| a. Floating or suspended matter                           | d. Visible film, sheen or coating         |
| b. Discoloration  | e. Fungi, slime, or objectionable growths |
| c. Aquatic life (including plants, fish shellfish, birds) | f. Potential nuisance conditions          |

In the event that no effluent is present at station R1, no receiving water monitoring data is required for station R1.

Notes on receiving water conditions shall be summarized in the monitoring report.

2.3.7.8- TETRACHLORODIBENZO-P-DIOXIN (TCDD)  
EQUIVALENT MONITORING

The discharger shall begin monitoring its effluent for the seventeen (17) 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin equivalents listed in Section 3, Table 4 of the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California", (congeners once during the dry weather and once during the wet weather each year for a period of three consecutive years). The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach.

A copy of Table 4 is shown below.

Table 4

<u>Congener</u>	<u>TEF</u>
2,3,7,8- Tetra chlorodibenzo-p-dioxin (CDD)	1
1,2,3,7,8- Penta-CDD	1.0
1,2,3,4,7,8- Hexa-CDD	0.1
1,2,3,6,7,8- Hexa-CDD	0.1
1,2,3,7,8,9- Hexa-CDD	0.1
1,2,3,4,6,7,8- Hepta-CDD	0.01
OctaCDD	0.0001
2,3,7,8- Tetra chlorodibenzofuran (CDF)	0.1
1,2,3,7,8- Penta-CDF	0.05
2,3,4,7,8- Penta-CDF	0.5
1,2,3,4,7,8- Hexa-CDF	0.1
1,2,3,6,7,8- Hexa-CDF	0.1
1,2,3,7,8,9- Hexa-CDF	0.1
2,3,4,6,7,8- Hexa-CDF	0.1
1,2,3,4,6,7,8- Hepta-CDF	0.01
1,2,3,4,7,8,9- Hepta-CDF	0.01
Octa-CDF	0.0001

The discharger shall report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit<sup>6</sup>, and the measured or estimated concentration. In addition, the discharger shall multiply each measured or estimated congener concentration by its respective Toxic Equivalent Factors<sup>7</sup> value and report the sum of these values. This information shall be submitted as part of the discharger's monitoring reports.

#### OPERATION AND MAINTENANCE

The discharger shall report the following:

<sup>6</sup> As determined by the procedure found in 40 CFR 136 (revised as of May 14, 1999)

<sup>7</sup> Table 4 Toxic Equivalency Factors (TEFs) for 2, 3, 7, 8- TCDD Equivalents, pg. 27, Policy for Implementation of Toxics, Standard for Inland Surface Waters, Enclosed Bays and Estuaries of California, Adopted March 2, 2000

<u>Activity</u>	<u>Reporting Frequency</u>
To inspect and document any operation/maintenance problems by inspecting each unit process. In addition, calibration of flow meters and equipment shall be performed in a timely manner and documented.	Annually

The amount of chlorine shall be monitored daily and reported monthly. Chlorine shall be measured in pounds per day.

### EFFLUENT TOXICITY TESTING

The discharger shall conduct chronic and acute toxicity testing on the effluent as follows:

Minimum

<u>Test</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Frequency of Test</u>	<u>Reporting Frequency</u>
Chronic Toxicity	TUc <sup>8</sup>	24-Hr. Composite	Quarterly	Quarterly
Acute Toxicity	TUa <sup>9</sup> or (P or F) <sup>10</sup>	24-Hr. Composite and Percent Survival	Quarterly	Quarterly

The test species given below shall be used to measure chronic and acute toxicity:

<u>Species</u>	<u>Effect</u>	<u>Test Duration (Days)</u>	<u>Reference<sup>11</sup></u>
Water Flea ( <u>Ceriodaphnia dubia</u> )	Survival and Reproduction	7	EPA/821-R-02-013 (Chronic) EPA/821-R-02-012 (Acute)

#### Toxicity Test References:

1. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA/821-R-02-012, October, 2002 or subsequent editions.
2. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water for Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October, 2002 or subsequent editions.
3. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program, EPA 833-R-00-003, June 2000.
4. Method Guidance and Recommendations for Whole Effluent Testing, EPA 821-B-00-004, July 2000.
5. Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, memorandum dated April 10, 1996 from Tudor Davies, Director of the EPA Office of Water's Office of Science and Technology.

<sup>8</sup> Chronic Toxicity Units

<sup>9</sup> Acute Toxicity Units

<sup>10</sup> Pass or Fail when using a t-test

<sup>11</sup> Additional references are listed in the Toxicity Test References section.

## QUALITY ASSURANCE

Dilution and control waters may be obtained from an unaffected area of receiving waters. Synthetic (standard) dilution is an option and may be used if the above source is suspected to have toxicity greater than 1.0 TU<sub>c</sub>.

A series of at least five dilutions and a control shall be tested for chronic toxicity testing and may be used for acute toxicity testing. The series shall include the following concentrations: 12.5, 25, 50, 75, and 100 percent effluent.

For the acute toxicity testing using a t-test, two dilutions shall be used, i.e., 100 percent effluent and a control (when a t-test is used instead of an LC50).

If organisms are not cultured in-house, concurrent testing with a referenced toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc.).

If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the toxicity test references, then the permittee must re-sample and retest within 14 days or as soon as possible.

## DEFINITION OF TOXICITY

Chronic toxicity measures sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or ambient waters compared to that of the control organisms.

Chronic toxicity shall be measured in TU<sub>c</sub>, where TU<sub>c</sub> = 100/NOEC. The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of toxicant to which the values for the observed responses are not statistically significantly different from the controls).

Acute toxicity is a measure of primarily lethal effects that occur over a ninety-six (96) hour period. Acute toxicity for Pimephales promelas can be calculated from the results of the chronic toxicity test for Pimephales promelas and reported along with the results of each chronic test. Acute toxicity for Ceriodaphnia dubia cannot be calculated from the results of the chronic toxicity test for Ceriodaphnia dubia because the test design is not amenable to calculation of a lethal concentration (LC50) value as needed for the acute requirement.

Acute toxicity shall be measured in Tu<sub>a</sub>, where Tu<sub>a</sub> = 100/LC50 or as pass/fail using a t-test. LC50 is the toxicant concentration that would cause death in 50 percent of the test organisms.

## REPORTING OF BIOASSAY RESULTS

The discharger shall submit the analysis and results of the toxicity tests, including any accelerated testing, in toxicity units with the discharge monitoring reports for the month in which the last test is conducted.

## REPORTING OF A TOXICITY IDENTIFICATION EVALUATION AND/OR RESULTS OF THE TOXICITY REDUCTION EVALUATION WORKPLAN

1. If a Toxicity Identification Evaluation (TIE) is conducted the discharger shall submit the results of the TIE with the discharge monitoring reports for the month in which the final report is completed.
2. If the Toxicity Reduction Evaluation (TRE) Workplan has been initiated, the discharger shall report on the progress of the actions being taken and include this information with each monthly monitoring report.

### REPORTING

1. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.
2. The discharger shall report with each sample result the applicable Minimum Level (as described in the California Toxics Policy) and the laboratory current Method Detection Limit, as determined by the procedure in 40 CFR 136 (revised as of May 14, 1999).
3. The discharger shall report the results of acute and chronic toxicity testing, TRE and TIE as required in the previous section entitled, "Effluent Toxicity Testing".
4. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurement(s);
  - b. The individual(s) who performed the sampling or measurement(s);
  - c. The date(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or method used; and
  - f. The results of such analyses.
5. The results of any analysis taken more frequently than required at the locations specified in this Monitoring and Reporting Program shall be reported to the Regional Board.
6. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
  
7. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations".
8. A duly authorized representative of the discharger may sign the documents if:
  - a. The authorization is made in writing by the person described above;
  - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and

c. The written authorization is submitted to the Regional Board's Executive Officer.

9. Reporting of any failure in the facility shall be as described in Provision No. 9. Results of any analysis performed as a result of a failure of the facility shall be provided within ten (10) days after collection of the samples.
10. The discharger shall attach a cover letter to the Discharge Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.
11. Daily, twice weekly, twice monthly and monthly monitoring reports shall be submitted to the Regional Board by the 15<sup>th</sup> day of the following month. Quarterly monitoring reports shall be submitted to the Regional Board by January 15, April 15, July 15, and October 15, of each year. Annual monitoring reports shall be submitted to the Regional Board by January 15 of each year.

12. Submit monitoring reports to:

California Regional Water Quality Control Board  
Colorado River Basin Region  
73-720 Fred Waring, Suite 100  
Palm Desert, CA 92260

13. A copy of the monitoring report shall also be sent to:

Regional Administrator  
U.S. Environmental Protection Agency  
Region 9, Attn: 65/MR, W-3  
75 Hawthorne Street  
San Francisco, CA 94105

Ordered by:

\_\_\_\_\_

Executive Officer

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\_\_\_\_\_

Date

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN**



**SITE MAP**

**IMPERIAL IRRIGATION DISTRICT  
EL CENTRO GENERATING STATION**

El Centro – Imperial County  
Discharge Location - NE ¼ of Section 32, T15S, R14E, SBB&M

Board Order No. R7-2004-0086